4. On a Collection of Batrachians and Reptiles made in South Africa by Mr. C. H. B. Grant, and presented to the British Museum by Mr. C. D. Rudd. By G. A. Boulenger, F.R.S., V.P.Z.S.

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The collections made within the last two years in South Africa by Mr. C. H. B. Grant and presented to the British Museum by Mr. C. D. Rudd, the Mammals of which have already afforded matter for two papers by Messrs. O. Thomas and H. Schwann, published in these 'Proceedings,' included a good series of Batrachians and Reptiles, a list of which is here given. No new species were discovered, but the series is interesting for the sake of the localities, our knowledge of the exact distribution of these animals in South Africa being still very imperfect.

A list of the localities is here given:—

I. Cape.
Durban Road, near Cape Town. This "Durban" is a town about 15 miles N.E. of Cape Town.

II. British Namaqualand.
Port Nolloth, at mouth of Orange River.
Klipfontein, a station on the railway between Port Nolloth and O'okiep, 54 miles from Port Nolloth. Altitude 3104 ft.

III. Zululand.
Hluhluwe Stream, flows west into False Bay.
Umfolosi Station, on the railway, about 5 miles north of Umfolosi River.
Eshowe, about 30 miles inland from Coast and Umhalazi River. Altitude 1800 ft.
Ngoye Hills, 15 miles E. of Eshowe, and 8 miles inland from Coast. Altitude 600–1000 ft.
Sibudeni, about 60 miles inland from coast, at source of Umhlatuzi River. Altitude 3500–5500 ft.
Jususie River, close to Sibudeni.

IV. Transvaal.
Wakkerstroom, on the Natal border and at southern end of Drakenberg Range.
Zuurbron, 20 miles East of Wakkerstroom.

BATRACHIA.

Aglossa.

1. Xenopus lævis Daud.

Durban Road, Umfolosi Station, Wakkerstroom,

The largest specimen (♀) measures 100 millim. from snout to vent.

In the present uncertainty as to the distinction of species in this genus, the distribution of *X. lævis* is difficult to trace. This species appears to be found all over South Africa where there is water, and it extends as far north as Angola to the West and Abyssinia to the East, the British Museum possessing specimens, which I cannot separate from the typical form, from Lake Mweru, Uganda, and Senafé.

Angola specimens (*X. petersii* Bocage), which have been referred either to *X. lævis* or to *X. muelleri* by Günther, by Peters, and by myself, cannot be separated, by any character that I can detect, from *X. lævis*. I have examined eight specimens, one from Benguella, received from Prof. Barboza du Bocage himself, five from Pongo Andongo, obtained by Dr. Ansorge, and two from Dr. Welwitsch's Angola collection. Bocage gives the length of the Angola specimens as not exceeding 65 millim. from snout to vent, but one of Welwitsch's specimens measures 80.

In the typical *X. lævis* from South Africa the subocular tentacle measures less than one-third the diameter of the eye, and is sometimes reduced to a mere tubercle, the inner metatarsal tubercle is very blunt and feebly prominent, never conical, and vomerine teeth are constantly absent.

The true *X. muelleri*, as described and figured by Peters in his 'Reise nach Mossambique,' vol. iii. (1882), has the tentacle more than half as long as the eye, the metatarsal tubercle more prominent, more conical than in *X. lævis*, and vomerine teeth, first noticed by Tornier, are often present. In addition to Mozambique, whence it was first described, this species is found in Nyasaland and on Zanzibar and the opposite coast.

To distinguish between *X. muelleri* and *X. lævis* is, however, not so easy as one might at first think, for the British Museum has received from Mr. C. S. Betton three specimens from hot springs near Lake Nakuro, British East Africa, which agree with the former in the prominent, conical metatarsal tubercle, and with the latter in the short tentacle and the absence of vomerine teeth.

X. clivii described from Erythræa by Peracca, and obtained in numerous examples at Addis Ababa and Ashoofi, Abyssinia, by Mr. E. Degen, agrees with *X. lævis* in the proportions, in the short tentacle, and in the absence of vomerine teeth, but is easily distinguished by the inner metatarsal tubercle being armed with a black claw, as in *X. calcaratus*, which inhabits Liberia, Lagos, Nigeria, Cameroon, the Gaboon, and the Congo. In the males of *X. clivii* the brown nuptial asperities, instead of being restricted to the inner side of the fore limbs, as in *X. lævis*, extend as a large patch on each side of the breast.

Two specimens from "West Africa," collected by Mr. Fraser, therefore probably from Nigeria or Fernando Po, which have been referred by Dr. Günther and by myself to *X. muelleri* in the British Museum Catalogue, agree with that species in the size of the eye, the length of the tentacle, and the presence of vomerine

teeth (five in number)*, with *X. clivii* and *X. calcaratus* in the presence of a metatarsal "claw." These specimens, the larger of which measures only 39 millim., no doubt indicate a distinct species, for which I propose the name *X. fraseri*.

Phaneroglossa.

2. Bufo regularis Reuss.

Umfolosi Station, Hluhluwe Stream, Ngoye Hills, Wakkerstroom.

3. Bufo granti Blgr.

Durban Road, Klipfontein.

Since this species was described, in 1903, from numerous specimens obtained by Mr. Grant at Deelfontein, it has been rediscovered at Matjesfontein by Dr. W. F. Purcell, of the South African Museum. The male specimen which the British Museum has received from that institution measures 60 millim. from snout to vent and strikingly resembles a *Bufo viridis*. The interorbital space is as broad as the upper eyelid, the tympanum measures three-fifths the diameter of the eye, the first finger extends a little beyond the second, the tibio-tarsal articulation reaches the tympanum, and the subarticular tubercles under the toes are all single. The single male specimen found by Mr. Grant in a garden on Durban Road, near Cape Town, agrees very closely with the Matjesfontein Toad, but some of the subarticular tubercles under the toes are double. Another male, from Klipfontein, also has double subarticular tubercles.

4. Bufo angusticeps A. Smith.

Durban Road.

Several specimens, the largest measuring 46 millim. from snout to vent. The first finger never extends beyond the second, the fold along the inner side of the tarsus is more or less distinct, and the subarticular tubercles of the toes are usually single, although there are occasionally two between the last phalanges of the fourth toe.

Bufo dombensis, from Dombe, Benguella, described by Barboza du Bocage in 1895 as a close ally of *B. angusticeps*, is more nearly related to Smith's *Bufo vertebralis*, which, following Günther, I have erroneously regarded as the young of *B. carens*. The examination of a small Toad found at Vredefort Road, Orange River Colony, by Major Barrett-Hamilton, and of which four specimens have been presented by him to the British Museum, has convinced me of my error. The breeding male, with large gular vocal sac, measures only 27 millim. from snout to vent, the female 35. In these specimens, the tympanum is close to the eye,

* The vomer is single in *X. lævis*, *muelleri*, and *clivii*, absent in *X. calcaratus*, *Hymenochirus*, and *Pipa*.

and may measure three-fourths its diameter; the parotoids are flat and very indistinct, broken up into several glands; the subarticular tubercles are double, and there is no trace of a tarsal fold. The limbs are shorter than in *B. carens* and the white rhomboidal spot on the vertebral line, which does not exist in *B. carens*, appears to be constant; black spots are always present on the belly.

5. Rana delalandii D. & B.

Durban Road.

6. Rana fuscigula D. & B.

Klipfontein.

7. Rana angolensis Bocage.

Eshowe, Sibudeni, Wakkerstroom.

The vocal sacs of the males form longitudinal folds on the sides of the throat.

8. Rana mascareniensis D. & B.

Sibudeni.

This species had not previously been recorded from South Africa. In the five specimens from Sibudeni the tibio-tarsal articulation reaches beyond the tip of the snout; a light vertebral stripe and a light line along the tibia are present.

9. Rana grayi A. Smith.

Durban Road, Klipfontein, Sibudeni, Ngoye Hills.

10. Rana fasciata Tsch.

Sibudeni.

The longitudinal folds and the dark stripes on the back are absent in the single specimen.

11. Phrynobatrachus natalensis A. Smith.

Sibudeni.

12. Arthroleptis wahlbergii A. Smith.

Sibudeni and Hluhluwe Stream. The British Museum has also received a specimen from Pietermaritzburg, through Mr. Quekett.

REPTILIA.

Chelonia.

1. Sternothærus sinuatus A. Smith.

Umfulosi Station.

A single half-grown specimen, the shell measuring 110 millim. As pointed out by me in 1896*, this species is very variable and

* Ann. Mus. Genova, (2) xvii. p. 15.

to distinguish it from *S. nigricans* is not without difficulties. In this specimen the cusps in the upper jaw are absent, the posterior border of the carapace is very distinctly serrated, the intergular shield is twice as long as broad, the length of the outer border of the pectoral shield slightly exceeds that of the humeral, and the suture between the abdominal shields is shorter than the front lobe of the plastron. Head pale brown above, with black vermiculations, white beneath, with blackish spots; plastron yellowish brown, bordered with black.

2. Cinixys belliana Gray.

Umfolosi Station.

This species had not previously been recorded from South Africa.

In the specimens collected by Mr. Grant the shields of the carapace are marked with black radiating streaks.

3. Homopus signatus Walb.

Klipfontein.

Lacertilia.

4. Lygodactylus capensis A Smith.

Ngoye Hills.

5. Pachydactylus bibronii A. Smith.

Klipfontein.

6. Pachydactylus mariquensis A. Smith.

Klipfontein.

7. Agama brachyura Blgr.

Klipfontein and Port Nolloth.

This species was established on a single female specimen labelled "Cape of Good Hope," from Sir A. Smith's collection. I have since examined four specimens collected at Deelfontein by Mr. Seimund, and presented to the British Museum by Col. Sloggett, and these, together with the six collected by Mr. Grant in British Namaqualand, enable me to give a revised description of this near ally of *Agama hispida*.

Head convex, subcordiform, as long as broad. Nostril not tubular, lateral, pierced just below the canthus rostralis in a convex nasal. Scales on anterior part of head smooth or rugose, sometimes feebly keeled, often trihedral on middle of snout, on back of head more or less strongly keeled, some erect and spinose; occipital enlarged; head about the ears and neck with short erect spines. Body strongly depressed, covered with irregular, imbricate, strongly keeled scales intermixed with strongly enlarged, trihedral, spinose ones; a small nuchal crest, sometimes continued along the body; ventral scales smooth or very feebly

keeled. Limbs moderate, with scales very unequal in size; hind limb reaching between the shoulder and the ear; tibia as long as the skull to occiput; fingers short, third longest; third and fourth toes equal, or fourth very slightly the longer, fifth not extending as far as first. Tail shorter or a little longer than head and body, cylindrical or slightly compressed, covered with strongly keeled scales. Male without gular pouch, with a single row of anal pores. Olive-brown or reddish brown above, with dark brown or blackish spots, the principal of which form a double series along the back, each pair separated on the vertebral line by a square or ⨉-shaped or ∩-shaped yellowish marking; lower parts whitish or greyish, with a wide-marked grey or blackish network, which may disappear in adult males; the latter always have a bluish throat.

	♂. millim.	♀. millim.
Total length	235	160
Head	29	22
Width of head	28	22
Body	81	63
Fore limb	53	40
Hind limb	72	54
Tail	125	75

A. brachyura differs from *A. hispida* principally in the fourth toe not being shorter than the third and in the absence of strong keels on the ventral scales.

8. Agama armata Peters.

Hluhluwe Stream.

9. Agama atra Daud.

Klipfontein.

Both *A. micropholis* Matschie (Zool. Jahrb., Syst. v. 1890, p. 607), and *A. microterolepis* Blgr. (Ann. & Mag. N. H. [6] xvii. 1896, p. 22), from the Transvaal, must be added to the synonymy of this species.

10. Zonurus polyzonus A. Smith.

Port Nolloth, Klipfontein.

11. Pseudocordylus microlepidotus Cuv.

Wakkerstroom.

12. Chamæsaura anguina L.

Umfolosi Station.

13. Varanus albigularis Daud.

Umfolosi Station.

14. Varanus niloticus L.

Ngoye Hills, Sibudeni, Jususie Valley.

15. Nucras tessellata A. Smith.

Klipfontein.

16. Nucras delalandii M.-Edw.

Sibudeni.

17. Ichnotropis capensis A. Smith.

Umfolosi Station.

The parietal shields sometimes form a short suture separating the interparietal from the occipital. The scales on the preanal region are much smaller in females than in males.

18. Scaptira knoxii M.-Edw.

Port Nolloth.

19. Scaptira ctenodactyla A. Smith.

Port Nolloth.

The femoral pores may number as many as 36 on each side.

20. Mabuia trivittata Cuv.

Wakkerstroom.

21. Mabuia varia Peters.

Klipfontein, Umfolosi Station.

22. Mabuia striata Peters.

Hluhluwe Stream, Umfolosi Station, Sibudeni, Ngoye Hills, Zuurbron, Wakkerstroom.

23. Mabuia sulcata Peters.

Klipfontein.

24. Scelotes bipes L.

Durban Road.

25. Acontias lineatus Peters.

Port Nolloth, Klipfontein.

Rhiptoglossa.

26. Chamæleon quilensis Bocage.

Jususie Valley.

27. Chamæleon ventralis Gray.

Port Nolloth.

OPHIDIA.

28. PYTHON SEBÆ Gm.

Umfolosi Station.

29. ABLABOPHIS RUFULUS Licht.

Sibudeni.

30. PSEUDASPIS CANA L.

Wakkerstroom.

31. DASYPELTIS SCABRA L.

Ngoye Hills.
Uniform brown (var. *palmarum* Leach). 23 scales across the body. Ventrals 218; caudals 75.

32. AMPLORHINUS MULTIMACULATUS A. Smith.

Wakkerstroom.
Uniform green, without spots, as in the specimens presented by Dr. Quain and mentioned in the British Museum Catalogue (iii. p. 125). Ventrals 138; caudals 76.

33. TRIMERORHINUS RHOMBEATUS L.

Durban Road, Wakkerstroom, Klipfontein.

34. PSAMMOPHIS SIBILANS L.

Umfolosi Station.
The single specimen falls under Division F of the British Museum Catalogue (iii. p. 163). Ventrals 165; caudals 97.

35. DISPHOLIDUS TYPUS A. Smith.

Sibudeni.
Green, the scales edged with black (Division D of British Museum Catalogue, iii. p. 189). Scales in 19 rows. Ventrals 174; caudals 119.

36. ASPIDELAPS LUBRICUS Laur.

Klipfontein.

37. DENDRASPIS ANGUSTICEPS A. Smith.

Ngoye Hills.

38. BITIS ARIETANS Merr.

Umfolosi Station, Hluhluwe Stream.

39. BITIS CORNUTA Daud.

Port Nolloth, Klipfontein.

40. BITIS CAUDALIS A. Smith.

Port Nolloth.